

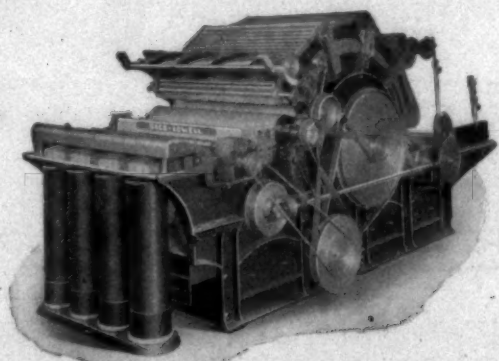
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VOL. VII

CHARLOTTE, N. C., JULY 2, 1914

NUMBER 18

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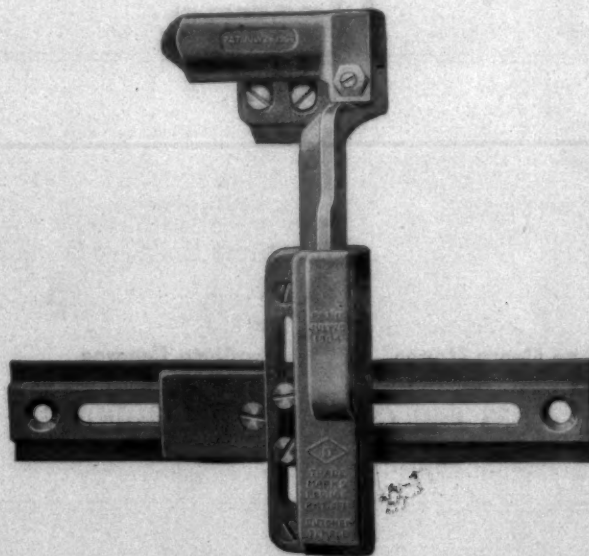
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Charlotte, N. C.

The South's Leading Textile Journal

SOUTHERN TEXTILE BULLETIN

VOL. VII

CHARLOTTE, N. C., JULY 2, 1914

NUMBER 18

Automobile Tire Fabrics

ALVIN KINSBACHER before Lowell Textile School Alumni

It is the rule and not the exception to start a technical treatise with the preface that the subject presents such a tremendous amount of material upon which to write that the author is necessarily limited in time and space. Modestly, I must admit that time and space are not the only things which limit me in a subject of this kind.

The subject is a big one, and strange to say its bigness lies not only in its possibilities, but in its very realities. The present-day application of tire fabric to industry and to society is enormous, and one may naturally, but wrongly infer that a greater development is apt to result from the present unprecedented demand for it.

I am prepared to contradict the belief—widely current, generally accepted and apparently supported by fact that tire fabric is in its experimental stage. There have been so many innovations attempted, such as the substitution of ramie for cotton, the twisting of a wire with the component cotton threads of the yarn and the experimentation with other than plain weaves such as leno and similar ones—that the failure of all these has not only removed the possibility of further development in tire fabric, but has reflected greater merit on its present qualities and construction. In mentioning these various experiments it may be well to make evident in a brief manner the cause of their failures.

The substitution of a stronger material for cotton has necessitated the introduction of a fibre which has not the necessary properties of elasticity and flexibility. Any increase in strength without these qualities would not be considered an improvement, but rather a detriment. In twisting wire with cotton threads the difficulty encountered is to secure a wire of such a material as will possess the same elasticity as the cotton.

Another feature of this construction is that the wire will tend to cut the cotton or other fibrous material.

In using leno or other weaves, which, by crossing the threads, yield a stronger fabric, the objection arises from the cutting action of the threads. The effect of tire service on a fabric is so peculiar that it would not be long before the threads would cut each other in the places where they cross. From these observations of what has already been tried, it is natural to

suppose that tire fabric has long since ceased to be an experiment. It stands today as a scientific certainty and is as much a standard commodity as army duck or any such similar fabric.

If I may be permitted a prophetic indulgence, I wish to say at the outset that tire fabric has reached its height today, that tomorrow, with increased knowledge of rubber compounds and tire construction, the importance of tire fabric will be greatly diminished. Even now the tire manufacturers, by using better and tougher rubber compounds and by employing better methods of tire construction, have made it possible to use carded and combed Egyptian fabrics, and in some cases even Peeler fabrics, whereas formerly Sea Island tire fabric was used exclusively.

Do not let this somewhat decreasing importance in respect to the fabric give you the idea that it is not a vital factor in the tire. It is the body or technically, the "carcass," and upon it to a great extent depends the durability and strength of the tire.

It is not my intention, nor have I the ability, to expound the theories of tire manufacture. My experience has been gleaned, firstly, in a cotton mill running exclusively on tire fabrics, and secondly, in a tire factory as fabric analyst. It is my desire to combine these experiences in such a way as to give you not only a fair idea of how tire fabric is made, but also what is expected of it by the tire manufacturer.

The automobile tire or pneumatic tire, as it is called, is a complex or like most other inventions, to meet gamization and combination of fabric and rubber. It has been created existing demands, and having arrived at its present efficient stage, has succeeded in establishing for itself a monopoly, opposed to which countless devices designed to supplant it have not even made an impression.

The name automobile tire fabric is generic. It includes many kinds of fabric which are used in the construction of a tire, but the most important of these and the one that is used in greatest quantity is the building fabric. It is estimated that of this style alone about forty million square yards are used annually. In addition to this building fabric there are various other fabrics that go into the making of a tire. These sundry fabrics include special constructions known

as chafing fabric, breaker fabric and other fabrics such as Osna-burgs, sheetings and tapes. The last two are used more especially in the process of tire manufacture and are not an inherent part of the tire itself.

Before approaching the subject of fabric construction, I wish to outline in a crude and desultory manner the various processes through which the fabric must go before it becomes part of a tire. When the fabric is received at the tire factory it is inspected by the proper officials, and of this I shall deal at greater length later on; but in this connection it is well to state that not all tire factories maintain a department of this kind. It is to the credit of the Firestone Tire and Rubber Company, with whom I am more familiar, and a few others, that they do maintain this department. It bespeaks well for a high standard of quality, and the rigidity and thoroughness of inspection in regard to fabrics betokens a similar care and exactness in the selection of other materials and in the various processes of manufacture.

After the inspection comes the drying process. The fabric is run over hot rolls and all the moisture is extracted, as it is essential that the fabric be dry before it is coated with rubber. The "calendering" or "frictioning" process is the means of forcing the rubber compound into and onto the fabric. The spaces or "pores" in the fabric are filled with rubber and then the fabric is "skimmed" or coated with a layer of rubber. The fabric is now ready to be cut into strips, and the cutting is done on a 45-degree angle in order to secure a greater strength and to prevent the unraveling of the threads in the strips. These strips in various plies, depending on the size of the tire, are built on a mould or iron core. This in short is the preparation of the fabric for the tire.

The building fabric, as previously mentioned, is the body of the tire. It is the most important fabric, and as such must possess above all—strength, flexibility and elasticity. The fabric is a plain weave, and weighs approximately 17.25 ounces to the square yard. The yarns from which this fabric is made are 11-22.5 or 11-23. The twist in the single yarn is from 14 to 16 and the ply yarn is 4 to 5 turns per inch. The texture is 23 ends and 23 picks per inch. The gauge or thickness

of the fabric is .040 inch. The water content should not be over 5 per cent. The take-up is found to be about 14 per cent and the contraction of filling about 10 per cent, leaving normally a difference of 4 per cent in the amount of warp and filling yarn stretch. This is an important point in the construction of tire fabric. It is obvious that if the difference is too great, the filling, when the fabric is subjected to a strain, will arrive at its straight length before the warp, and will consequently weaken or break before the straight length of the warp is reached. When the percentages of crimp or bend in the warp and filling are about equal or within 5 per cent of each other the warp and filling will tend to reinforce each other. In my capacity as fabric inspector I have analyzed so-called tire fabrics which had 32 per cent take-up in the warp and 7 per cent stretch in the filling. The difference of 25 per cent made them totally unfit for use in tires, although the fabrics were in every other respect perfect.

Building fabric is used in various grades, but the construction remains the same. Sakellaridas, or cotton grown in Egypt from Sea Island seeds, is a material that has become very prominent. The staple is longer and stronger than Sea Island, but isn't quite so elastic. In color, it is a yellowish white, a compromise between Sea Island, combed Egyptian and carded Egyptian are also used in great quantity, chief and most important of which is Sea Island.

Strength obviously is the paramount feature in a tire fabric, and upon this factor there cannot be put too much emphasis. Every tire manufacturer, even though he has no fabric inspection department, has at least a tensile strength testing machine. They have various ways of testing, and each method results in a different standard of strength. For example, breaking a 3-inch strip in a 2-inch jaw is virtually testing two inches of fabric, but will yield a higher strength test than if just two inches are tested. This is because the two inches in the former case are reinforced by the threads adjacent, although not held in the jaws of the machine. The standards of strength which I will give you is based on a different method of testing and yields a lower but truer breaking strength. A piece of fabric is unraveled down
(Continued on Next Page).

Automobile Tire Fabrics.

(Continued from Page 3.)

to one inch, representing in number of threads the exact texture of that inch. This strip of fabric is placed in the jaws and tested for strength, and can indicate no greater strength than the exact number of threads in that inch actually possess. According to this method of testing we arrive at the following standard for strength in building fabric:

Sakellarides	Warp, 340	Filling, 360
Sea Island	Warp, 310	Filling, 320
Comb. Egyptian	Warp, 275	Filling, 285
Card. Egyptian	Warp, 260	Filling, 270

A question may arise as to the cause of the difference in warp and filling strength. When it is remembered that the warp is woven under considerable tension, this difference in strength is readily understood.

The breaker fabric is applied on the tire just beneath the tread, and its purpose is to protect the building fabric and to distribute the shock that the tire necessarily receives on the road, over as great a surface as possible. There are many and varied constructions of breaker fabric, each manufacturer having his own particular weave and construction. The average breaker fabric, if such there be, is somewhat similar in construction to the building fabric in respect to the yarns. The texture is very much lower in order to permit large openings in the fabric to accommodate more rubber than the other fabrics. The weight of the fabric varies, of course, with the construction, but usually is somewhere around 10 ounces to the square yard. Twelve ends and thirteen picks per inch give the necessary openness to the fabric. The weave will vary anywhere from a plain weave to a mock leno. It is made of Sea Island, combed Egyptian or carded Egyptian. It is difficult to set a strength standard for this fabric, as any change in texture, weave or yarns will greatly modify any standard which may be placed upon it. However, with a construction such as is outlined above the breaking strengths would be as follows:

Sea Island	Warp, 160	Filling, 180
Comb. Egyptian	Warp, 140	Filling, 155
Card. Egyptian	Warp, 115	Filling, 130

The chafing fabric is used on the side walls of the tire, where more flexibility is required and is of necessity a lighter fabric. It is a plain weave weighing 9 ounces to the square yard. The yarns are 4-22.5 or 4-23. The gauge or thickness is .022. There are 34 ends and 34 picks to the inch. It is made of Sea Island or combed Egyptian and the breaking strengths are as follows:

Sea Island	Warp, 155	Filling, 170
Comb. Egyptian	Warp, 125	Filling, 140

The other fabrics, osnaburgs, sheetings and tapes, need no particular mention, as they are standardized fabrics and differ in no respect from the fabrics that are on the market today.

Before discussing the inspection of the tire fabric, I want to touch upon some of the precautions that are taken in the mill in order to turn out a perfect fabric.

The spinning of the yarn is, of course, an important step in the work and it follows that unless the maximum strength of the cotton is secured here the succeeding processes of manufacture cannot yield a suitable tire fabric.

The twisting of the single yarn into ply yarn is not such a simple problem as it appears. When 11 single threads are twisted into one, there is always a possibility of one or more threads breaking and the twisted yarn continuing in its whirly course with a fewer number of component threads than the requirements demand. This feature is known as "dropped ends" and is serious weakness when found in the fabric. It is absolutely essential that every piece of yarn should have its required number of component threads its entire length; and to twist it with this unfailing accuracy involves the human element more than the mechanical, as the result depends largely upon the skill and alertness of the operatives.

Throughout the entire handling of the yarns, warp and fabric there must be avoided any contact with oil, dirt or grease. Rubber will not adhere to an oily or greasy fabric and the tire manufacturer is very particular in regard to the cleanliness of the fabric which he buys. The mill runs its looms on all grades of tire fabric and it is not always easy to keep the different grades of yarn separate. A weaver may be running one loom on Sea Island and another on Egyptian and may inadvertently mix the bobbins, weaving into a Sea Island fabric one or more bobbins of Egyptian yarn. Such a fabric is said to have "mixed filling" and is generally rejected by the fastidious fabric buyer.

It is important that there be no broken or knotted threads. When a filling thread breaks the pick is pulled out entirely and the loom started with a new pick in its proper shed. In the case of a warp thread the yarn is spliced; that is, two or three component threads are knotted at a time in different places so that the binding of the broken yarn does not make a bulky knot.

There must be no holes in the fabric, and everything about the fabric must be even and uniform. After the weaving comes the mending, burling, mill inspection, finishing and packing. The fabric is rolled, and wrapped with paper and burlap for shipping.

The fabric, being a plain weave and of heavy construction, appears to most people as a very simple one, but this idea is abandoned when the number and diversity of tests which the fabric must undergo at the tire factory is represented. These tests may be divided into two classes: the physical and the visual inspection.

The physical tests include tests for strength, weight, thickness or gauge, texture, take-up, contraction of filling and water content. When these physical tests are made and found satisfactory the fabric is run over an electrically lighted inspection perch. This is the visual inspection. This is the visual inspection of irregularity in the construction of the fabric becomes apparent.

In the beginning of this article, I ventured the opinion that tire fabric is no longer an experiment; and when you read over the following points which are looked for on the perch you may agree with me that no experiment could possibly meet these rigid requirements. The irregularities that are looked for are as follows:

Loop Knots	Drop End Yarn
Warp Knots	Split End Yarn
Beat Ups	Oil Stains
Bad Start Ups	Hard Twist Yarn
Uneven Fabrics	Soft Twist Yarn
Slack Filling	Mixed Warp or Filling
Slack Warp Ends	Mispicks or Double
Pulled-in Selvage	Smashes
Reed Marks	Floats

While the presence of any one of these may not of itself constitute sufficient grounds for rejection, a combination of several of them or the frequent recurrence of one of them, would place the fabric in the imperfect class and render it unfit for use in tires.

These strict specifications and requirements for the fabric will give you an idea of its importance in the building of tires, and may contradict in a sense the statement made in the beginning that with increased knowledge of rubber compounds and tire construction, the importance of tire fabric will be greatly diminished. These two need not necessarily conflict, as in its present form the pneumatic tire of today requires all the strength, flexibility and elasticity that can possibly be brought forth in a fabric, but with a prospective advancement in tire building and the possible substitution of a solid resilient substance for air, the fabric may, as prophesied, become less important than it is now.

Carding Points.

In almost every carding room it is a common thing to hear the coilers on the drawing frames making a rattling noise. This is generally due to a dry coiler or a small piece of matter lodged in the groove for the reception of the coiler. However, it is strange when one stops and thinks of it, how few drawing tenders know what to do in such a case. They should be instructed each time a coiler is found dry or dirty to first lift out the coiler to ascertain whether there is dirt in the groove or not. If none is found, the tender should be instructed to oil the coiler.

When a coiler is dry or dirty, it offers much resistance to the train of gears driving it, and in a short time considerable wear takes place, and although the work is not affected, it does much injury.

There are many times when a can will fall to the floor from the coiler on the card or drawing frame. In most cases the can is blamed and marked and placed to one side. But the real cause is generally due to a small piece of dirt being lodged in the groove in which the turn table revolves. I find that when dirt is lodged under the turn table of either card or drawing, that it will not cause the can to fall to the floor every set, but will every little while during the day. So that in this case, again, the turn table should be lifted each time the can falls out and thoroughly cleaned.

In lifting the coilers out of the drawing frame great care should be exercised, for the reason that the frame on which the coiler revolves is very weak and easily broken.

I notice often in many mills when a coiler is broken, the frame is stopped until repairs are completed. This occurs mostly in case of electrical stop motion drawings, be-

cause, owing to no stock passing through the valender rolls on the delivery where the coiler is broken, it is found impossible to run the frame. Removing the top preventer rolls from the lower preventer roll is an easy matter, but to many separating the calender rolls while in motion seems a puzzle. Not only in case of a coiler being out of repair, but other things connected with the delivery of a drawing is liable to cause delay, and stopping the whole frame means a loss of production.

In such cases, first remove the top preventer rolls from the bottom preventer roll on the delivery where repairs are to be made. Next, come in front of the drawing and pick a long piece of sliver, say about one yard long, wet one end, then remove the clearer on the calender rolls for that delivery; lay the wet end of the sliver on the front calender roll and then start the frame slowly. When the whole length of the sliver is wound around the roll, the frame can be put on full speed and run for hours, when a new piece should replace the first one.

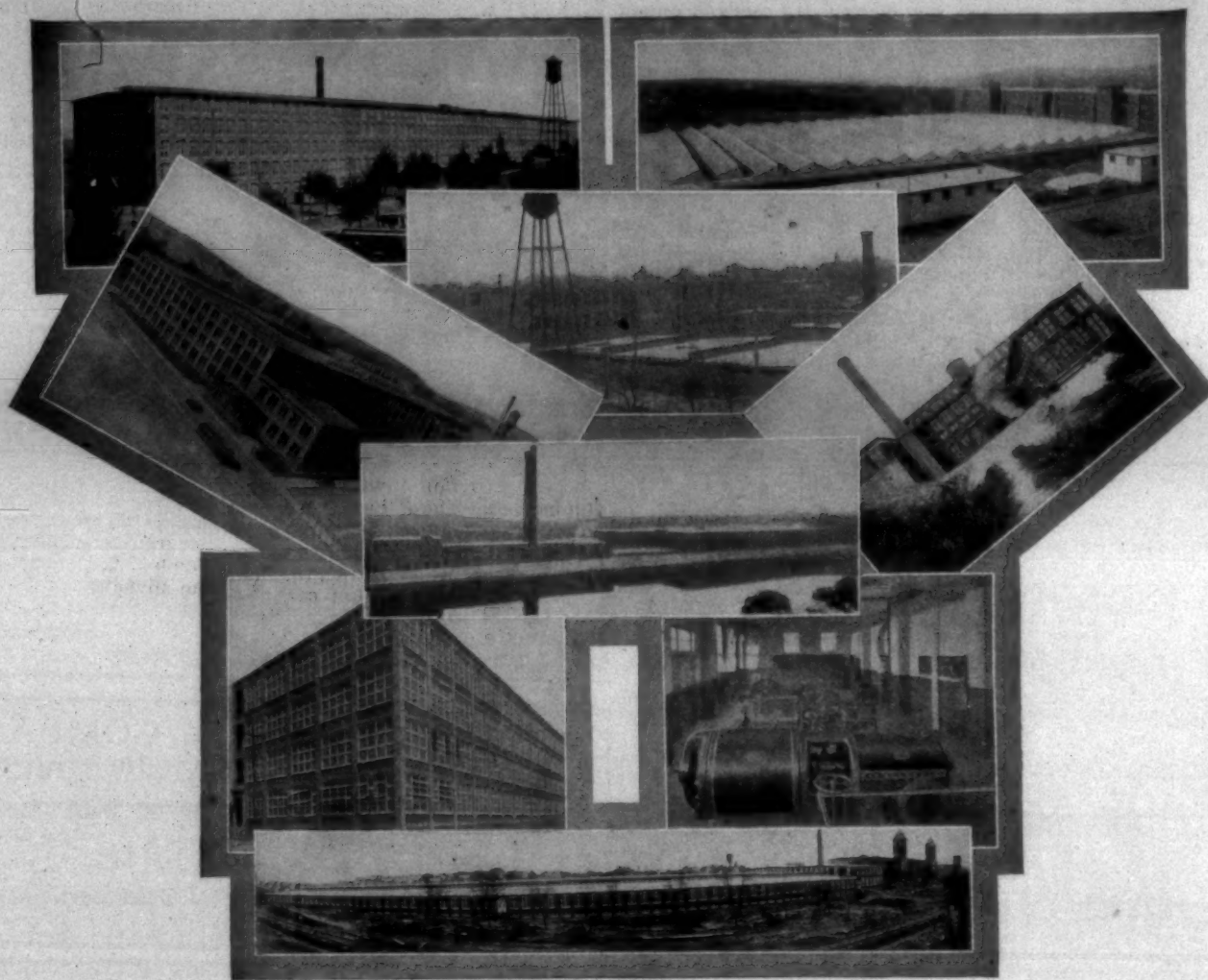
Care should be taken that too much sliver is not wound, as it may separate the calender rolls to such an extent as to cause the opposite ends to come in too close contact and cause the frame to be continually knocking off.

It pays also to instruct every new drawing tender to be sure and have what is known as tail ends hanging over the top of the can after doffing. The writer never fails to do this, and I am sure I have saved myself much work and the company much money by so doing, because every practical carder will admit that this practice of allowing ends to hang over the top of the cans has caused many bad break-downs on drawing frames. On all drawing frames, the coiler shafts are fairly well protected, but somehow, the end of the sliver is too often wound around the coiler shaft, which in a short time will make a mess. It is very little trouble to instruct a new hand to be sure on starting the frame that every end is in the can.

Another common fault found in most carding rooms is the drawing coiler between the tin roll which supports the ends on the slubber and the back rolls. I have seen in some mills where a bunch would come through every few minutes. I know a mill that is bothered much at this very writing with the above trouble and as they happen to be subscribers to this journal, the following will remedy the trouble, and may also help out others having the same trouble.

The first thing to do is to stop the roll, then lengthen the arms that support the tin roll about three inches. By having a greater space between the tin roll and the back drawing rolls, the coils in the drawing will be extracted before entering the back rolls. Having the roll stopped will also aid in making the coils in the drawing disappear.

By lengthening the arms as stated, the tin roll is brought more central over the cans, and I find this a great aid also in preventing the drawing from breaking in the cans. —Canadian Textile Journal.



G-E Mill Power Equipment Predominates in 1913 Construction

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Pacific Mills	Yes	Yes	Lonsdale Mfg. Co.	No	No	Chalmers Knitting Co.	In part	No
Riverside & Dan River Mills	Yes	Yes	Empire Cotton Co.	Yes	Yes	H. C. Aberle	Yes	Yes
Ludlow Mfg. Associates	Yes	Yes	Hope Webbing Co.	Yes	Yes	Moorhead Mills	Yes	Yes
Erlanger Cotton Mills	Yes	Yes	Lincoln Mill	No	No	Sterling Knit Goods Co.	Yes	No
Woodside Cotton Mills	Yes	Yes	Crystal Spring Bleachery	Yes	No	Potter Knitting Co.	Yes	No
Lancaster Cotton Mills	Yes	Yes	Sterling Mills	Yes	Yes	Whitehead Hosiery Mills	Yes	Yes
Virginia Cotton Mills	Yes	No	Columbus Mfg. Co.	Yes	Yes	Russell Mfg. Co.	Yes	Yes
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Cotton Spinning Examinations

In April of each year the City and Guilds of London Institute, London, England, hold cotton spinning and weaving examinations and it has been our custom to publish many of the questions.

We have found that many of our subscribers have been greatly interested in the examination and this year we shall publish practically all of the questions that will interest our readers. The answers given to the questions are taken from the Cotton Factory Times of England and are by their well-known contributors who use the names "Lectus" and "Fabricus."

Question.—Design an extra warp spit effect on at least 30 ends and 30 picks arranged in five end satin order on a plain ground.

Answer.—Fig. 10 shows the spots

headstock, both for drawing-out and taking-in of the carriage. The large drum I on line shaft gives motion by the long top belt to the fast and loose pulley C on the counter shaft CS. The large belt drum D on the counter shaft drives the mule during the run-out of carriage, while the small rope pulley T drives the mule during the backing-off and taking-in.

Referring first to drawing-in or spinning the down belt reaches from large drum D to the fast and loose pulleys F of about 16 inches diameter on the rim shaft. The fast F is keyed to the rim shaft, while the other pulley runs loosely thereon. At or near the end of the run-out of carriage the down belt is moved upon the loose rim shaft pulley, and is practically out of

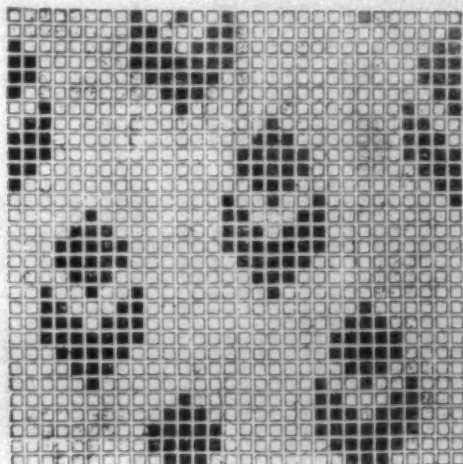


Fig. 10.

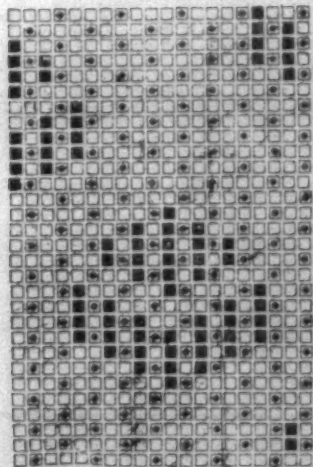


Fig. 11.

arranged in correct order on 30 ends and 30 picks. Fig. 11 shows a portion of the full design, including the plain ground thereads. The full design would occupy 60 ends and 30 picks.

Question.—Describe how the driving of mules is usually effected from the line shaft, stating which portions of the mule are independently driven. State your opinion of the advantages and disadvantages of duplex driving as compared with the single drive, giving full reasons.

Answer.—The three small illustrations on next page indicate the ordinary plain method of driving from line shaft to counter shaft, and from counter shaft down to the

action until the carriage again reaches the back stops. For backing-off the large friction dish M is forced into gear with the leather-covered cone on the fast pulley F, and drives the rim shaft in the reverse direction. By means of the "rigging" band the top rope pulley T is always driving the pulley R on the side shaft, and a small spur wheel on the side shaft drives the large friction wheel M, while a bevel wheel on the same side shaft drives a bevel fixed on the vertical taking-in shaft.

The backing-off and taking-in clutch halves are always being rotated so long as the counter shaft is working, but are harmlessly rotating so long as the respective

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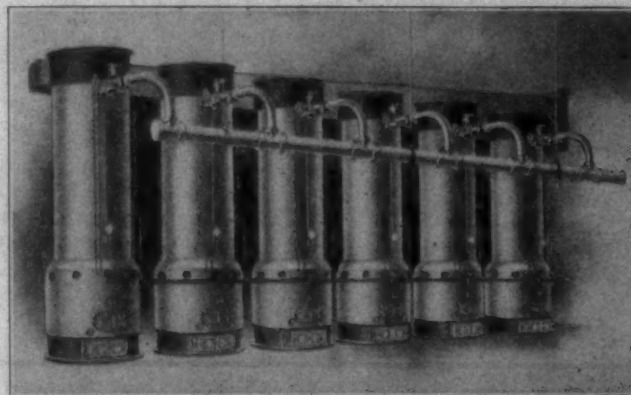
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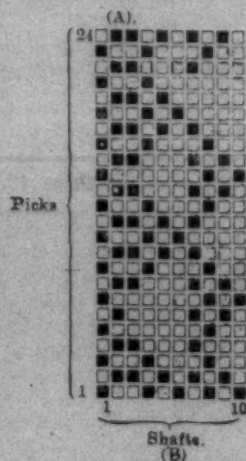
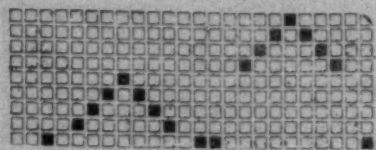
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friction clutches are not in gear.

In regard to duplex driving, this method requires two narrow fast and loose pulleys at F, and two narrow down belts moved about by the same belt fork. In this way two bolts of 2-inch width each may be



used, giving a driving width of 5 1-2 inches with a side traverse of only three inches. With only one belt a 4 1-2 inch belt is still one inch smaller in driving width, and yet it possesses the disadvantage of having to be frequently moved backwards and forwards across the pulleys for about 4 5-8 inches, as com-

pared with the 3 inch of the duplex belt. Reduced wear of the edges of the belt, increased driving power, and quick changing from one pulley to the other, are the chief advantages of duplex driving. Its disadvantages are, the tendency for one belt to become tighter than its companion, for one belt to break and become entangled with the machinery, while the other continues to drive the mule, and a tendency to spring the mule carriage out by a very quick change from loose to fast pulley. The adoption of strap relieving motions, and improved belt forks has diminished the merits of duplex driving. Both systems are very extensively adopted. Naturally, the duplex driving takes up a little extra length of rim shaft, and adds another belt for care and upkeep.

Question.—State what functions of a fly frame are controlled by the ratchet or star wheel of the change motion, briefly describing how the control is effected in each instance. What would be the effect of an increase or decrease in the number of teeth in this wheel?

Answer.—The ratchet wheel of a fly frame does work which in some respects resembles the work of the ratchet wheel or shaper wheel of a mule, but in some other respects the work is quite dissimilar. On a mule or ring frame the ratchet wheel controls the diameter of the cops along with the thickness of the yarn, but on the fly frame the ratchet wheel does not control the

diameter of the bobbins, although there is a relation between the two, as, for example, in both cases a larger wheel is used with a thinner hank or count of cotton.

Dealing now strictly with the fly frame, the chief duty of the ratchet or star wheel is to control the longitudinal traverse of the cone belt along the length of the cone drums. In this way the ratchet wheel regulates the speed of the bobbins both in regard to revolution and in regard to vertical reciprocating movement. As the bobbins increase in diameter it is necessary to diminish the speed of the bobbins in the two directions indicated, and this diminution must be done in a manner calculated to exactly agree with the increase in bobbin diameter, according to the counts and thickness of the cotton. To illustrate with a definite example we will assume a change from 10 hank to six hank roving. A smaller star wheel must be applied, or one with fewer teeth, and this will have a necessary effect, as follows:—The longitudinal ring at each reversal of the lifter, movement of the cone belt occurring will now be greater than previously, and therefore the diminution in speed of rotation and in speed of vertical traverse will be proportionately greater for each change, as required by the more rapid increase in bobbin diameter due to making a thicker roving. A bobbin leading frame is referred to in this answer.

The size of ratchet wheel also controls the amount of each longitudinal traverse of the short rack, poker, or hanger bar, and in this

way is a chief factor in forming the two cones of the bobbins. For example, in the change from 10 to six hank roving the smaller ratchet wheel will give a greater movement each time as required by the thicker hank roving. The more rapid shortening of the effective working length of the short rack results in the jack screws moving through their proper space in a proportionately shorter time, thus changing the lifter traverse sooner, and before the lifter can travel as far as previously.

Question.—Describe how the spindles of a fly frame are driven, commencing from the driving shaft. Give full details of the manner in which similar direction of rotation is imparted to both back and front rows of spindles from opposite direction of rotation of the two long spindle driving shafts.

Answer.—The almost invariable method adopted for driving the spindles in slubbings, intermediates and roving frames, of whatever make, is to drive directly down from a spur wheel on the main pulley shaft, to a similar spur wheel on the first long spindle shaft through the medium of a large carrier wheel. The spur wheel on first long spindle shaft gears directly with and drives a similar wheel on second long spindle shaft, and this means that these two long shafts revolve in opposite directions. Skew bevels on the long spindle shafts drive smaller bevel wheels set-screwed on the spindles, there being

(Continued on Page 16.)

WARP THREADS

Warp knitted fabrics are now extensively used in the manufacture of both plain and fancy knitted goods, and with the possible exception of hose and half-hose—although, even in this case, warp knitted legs and insteps have been made—all classes of garments are made, to a considerable extent, from warp knitted fabrics.

It is somewhat surprising in these days to find that there is still a kind of half-expressed prejudice against the manufacture of warp knitted goods. Manufacturers who cannot help admiring the qualities of a warp knitted fabric, who openly express their approval of the many excellent designs that can be made on warp knitting looms, and who are frequently asked for warp knitted articles, are still reluctant to add warp knitting looms to their plant of knitting machinery. They may be heard to remark that there is too much small orders; that there is a difficulty in obtaining the right sort of labor, and that there is a scarcity of capable designers, but the fact that these remarks are passed seems to show that there certainly is scope for the extension of the warp section of the knitting industry, or otherwise some of the above remarks could not logically be made.

It is true that in some lines of warp fabrics, as with other classes of knitted fabrics, prices may be cut owing to the fact that these goods have been made for a number of years, but the manufacturer is not advised to take up lines in which he must meet with severe competition of others who have been in the trade for a considerable time, and who, in consequence, know that particular branch of the business from A to Z.

Quite to the contrary, the manufacturer should say I am producing underwear, jerseys, coats, shawls, scarves, ties, or what not, on weft knitting machines, and in some branches I am considered a specialist. Can I, with advantage, make other lines of similar articles on a warp principle? Is the warp fabric suitable, and, if so, can I produce cheaply? In many cases the answer will be in the affirmative, and there seems no doubt that for well-established firms specializing on certain articles, the addition of a range of

warp samples, would add to their prestige, and it is only where a manufacturer is in a small way and totally non-technical that the addition of warp machinery is not advisable.

Perhaps one of the points which a manufacturer objects to in the making of warp knitted goods is that of the prior warping of the threads. Warp necessarily necessitates the winding of the yarn onto a number of bobbins and then transferring the multiple threads onto a beam. For this purpose a warping stage and mill is required. The stage is simply a convenience for holding a number of bobbins, an average number of which may be taken as 72. These threads are then wound onto one part of the mill which may be likened to an extended reel. The threads are passed through holes in a warp plate or between vertically disposed points in order to evenly distribute the threads, and in some cases a slight traverse motion is given so as to spread out the warps. After a definite number of turns have been given to the mill, the stage is shifted so that a similar warping can take place adjoining the first set of warps, and so on until the whole of the threads are on the mill. The threads are then worked off the mill onto the warp roller or rollers of the warp knitting loom. The advantage of the intermediary warping mill will readily be seen, as, owing to the large diameter of the reel a large amount of warp can be put on at an equable tension.

There has been much discussion lately about the warping of artificial silk, as owing to its constitution and structure it does not lend itself so readily to the process of warping. This weakness of artificial silk, however, has not been considered from the right standpoint, as in many cases the artificial has been warped with the same amount of sangfroid as is practised in the case of worsted. It should be borne in mind that the warping of artificial silk yarns must be effected with great care, due notice being taken to keep it under tension and see that the knots are properly tied and placed. Porcelain or glass guides should be used in the winding, and knots kept at the bottom of the bobbins.

The mounting of the warp rollers and the drawing in of the thread is the next operation. The beams should be placed in position and the threads drawn in through the holes in the guide bars in the prescribed order, and finally through the holes in the guides themselves, a hook similar to the binding-off rollers being attached to the strings of the latter in sets. Care must be taken to preserve an equal tension on all the threads. The exact methods used in starting are naturally dependent upon the particular type of loom that is being used. Bearded needle and double rib latch needle looms are practically self starting, although the latter must have the requisite drawing-off power applied, as also are single rib latch needle looms with sinkers. Single rib latch needle looms without sinkers require the first lap to be taken below the latches before the making of the second lap. The first few laps should be watched carefully so that it can be seen whether each needle is taking the thread properly. Selvage threads supplied from bobbins should be drawn in where the guides do not lap continually round working needles.

The setting up of the loom is, after all, a simple matter, and given proper instructions, an intelligent worker, although unskilled in the manipulation of a large number of threads, soon becomes proficient. It is well known that in the weaving trade where warping is the trade basis, that loom mounting is a specialized operation, and even in warp knitting, if sufficient looms are in use, it may be found profitable to subdivide the labor in a similar manner. In this way the question of obtaining the right sort of labor would soon be overcome, and by introducing specialized labor for warping, mounting, and operating, it would then become necessary to possess an experienced designer who could adapt himself to the manufacturer's specialties, who could make the design in accordance with the use of the intended article, not as has so often been the case; revive an old design for a new article.

Would the organization of the warp knitting trade on these lines give an impetus to the industry? In

this age of specialization, and given a numerical sufficiency of machines, there is no doubt that this would be the most rational method of procedure.—Hosiery Trade Journal.

The Flyer-Lead and Bobbin-Lead Fly Frames.

In the flyer-lead frame, when you decrease the speed of the bottom cone you increase the speed of the bobbin. At no time does the bobbin revolve as fast as that of the bobbin-lead except at doffing time. The faster the bobbin cone revolves the more revolutions are taken from the bobbins. Any hesitation of the bottom cone has a tendency to slacken the end, which is contrary to our former belief. When the bottom cone is raised at doffing, the speed of the bobbin is increased to the same proportion to that of the spindle. Owing to the position of the presser paddle, the grip is not as firm at the termination of paddle, consequently, the tension comes more between the bottom of the hollow leg of the flyer and the bite of the front rolls. For these reasons, the pressure between the paddle and the surface of the bobbin does not affect the compactness of the bobbin as in case the bobbin-lead.

The sun-gear rotates in the same direction as that of the driving shaft, which is a great aid to the cone belt, and one of the strongest points in favor of the flyer-lead.

In the bobbin-lead frame, when you decrease the speed of the bottom cone you decrease the speed of the bobbin. The bobbin speed exceeds that of the flyer-lead at all times except at doffing time.

The faster the bobbin cone revolves the faster the bobbins revolve.

Any hesitation of the bottom cone has a tendency to slacken the ends the same as the flyer-lead.

When the bottom cone is raised at doffing time, the bobbin speed is reduced to the same proportion to that of the spindle. Owing to the position of the paddle the grip on the strand is greater, and this, aided by the pressure, makes a more compact bobbin, but makes the cone could adapt himself to the manu-

(Continued on Page 16.)

W. H. BIGELOW

AGENTS FOR

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DISCUSSIONS BY PRACTICAL MEN

Lead Pipe.

Editor:

I would like to know if there is any reason why lead pipe should not be used for conveying water that is to be used for drinking purposes.

Yours truly,
Subscriber.

Belts.

Editor:

In answer to Tennessee, who wanted to know how to clean his belts, I would say that it is a good plan to save all old rubber pump seats or other rubber discs and cut one side straight and use them to rub the dirt and lint off the belts. This can be done best while the belts are running. Every other week on Saturday before stopping time the belts should be well rubbed off and treated with boiled linseed oil or castor oil. This will keep the belts from getting dry, make them pliable and increase the pulling power as well as the life of the belt.

If the oiling has been carelessly done and the belts have become soaked with oil or grease, the belts can be washed with naphtha which has a tendency to dissolve the oil and grease and wash it out without injuring the belt. These are my ideas in regard to the matter. I would be glad, however, if some of the other fellows would let us hear from them.

Gringo.

Humidity.

Editor:

In his answer to Inspector, in regard to the amount of humidity for the different rooms, D. M. A. suggests for card room 80° dry bulb and 70° wet bulb, for spinning room 83° dry bulb and 75° wet bulb, and for weave room 83° dry bulb and 80° wet bulb. According to the table I have this would mean 56%, 64% and 85% relative humidity respectively for the different rooms. This sounds very nice and I have no doubt but that the work would run well and that the weights would keep uniform under these conditions. A question that is bothering my mind, however, is how are these conditions to be obtained. It is easy enough to say that these conditions should exist but obtaining them is to me another proposition.

The dry bulb, if I am not mistaken, registers the actual temperature of the air. At this place the temperature in the weave room has recently been 93° and above and in the spinning room one day recently the temperature reached 103°. Now the question is how are we going to get the temperature down to 83° which D. M. A. says is the correct temperature. Recently, due to the help complaining about the heat, the windows have been opened to allow the air to circulate. D. M. A. doubtless knows the result of this. The outside air has a relative humidity



C. P. Thompson,
Trion, Ga.

Member of Board of Governors of Southern Textile Association.



Frank E. Heymer,
Alexander City, Ala.

Recently elected chairman of the Board of Governors of the Southern Textile Association.

of 45% or less, when this circulates through the rooms you can readily see the job that the humidifiers have in trying to keep the depression of the wet bulb up to where D. M. A. recommends it. Instead of keeping the weave room depression at 3, I think, it will be found in the majority of weave rooms several times this, at this time of year, and the same also applies to the other rooms.

This is an important question and I will be glad if some of the boys will enlighten me on it, if they have anything worth while. For one I would enjoy very much seeing the conditions here all through the summer, just as D. M. A. recommends them.

Tight Pulley.

Uncle Silas Comes Back.

Editor:

Uncle Silas is partially recovered but is still very feeble. His eyes and ears are dull, his feet tottering, but still on the job. After having my nephew to read his Cousin Weaver's letter, if I heard and understood correctly, I am constrained to believe he has the same idea of carding advanced by his cousin H. C., Watchful Waiting, and Card Gauge. Weaver says the feed plate supports the fibers while they are being cleaned and disentangled. Yes, but we do not consent that this feed plate should be jammed up to within 7-1000 of an inch of the licker-in which is traveling about 1,200 feet per minute, causing it is said 2,000,000 sharp teeth to pass the nose of this feed plate per minute. For heaven's sake, let us stop and consider for a minute, what is being done to these delicate fibers; then let us go back a few years to my younger days and look at the old double feed roll system. Now mind you, I don't advocate these old methods, but to illustrate, we'll say these rolls were about 2 inches in

diameter, or we will say 1 inch from the bite of these rolls to the licker-in. Now, we must get up to within 7-1000 to do good work. No sir, such is not the case.

He says the licker-in is a feeder. Yes, not a choker. I have no comment on his doling mote knives. He says to remove impurities, motes, husks, etc. Yes, but surely you would not have us believe these mote knives should be set so as to peel these fibres like you would the insulation from an electric wire with a pocket knife? No, let's reason a little first, I want to emphasize that the settings mentioned are nothing, when compared with the full mechanism of an up-to-date carding engine. These are important functions, true, but as stated before, there are only two objects in view, i. e., cleaning and strengthening the fibers. The licker-in takes the cotton from the feed plate at about the rate of 1 1-2 fibers per tooth of the licker-in. How do I ascertain this? Well, I find in one of my text books, a Dr. Brown is authority for the statement that in one pound of ordinary upland cotton there are 140,000,000 fibers. 7000 grains equals one pound, so $140,000,000 \div 7000 = 20,000$ fibers per grain. We have assumed a 13 oz. lap 437.5 grains per oz. $437.5 \times 13 = 5,687$ grains per yd. $5687 \div 36 = 158$ grains per inch $158 \times 20,000$ fibers per grain = 3,160,000 fibers per inch of lap there is 2000 teeth pass the nose of the feed plate while one inch of lap is delivered each tooth would receive $158/100$ fibers. Now I contend that the mote knives do not have to actually come in direct contact with these individual fibers to remove the motes and trash, as such do not actually adhere to the individual fibers, but is fed to the licker-in with the fiber. As they are somewhat heavier they are not so inclined to adhere. They follow the cotton only by circulation and these mote knives and

screens, casings, shrouds, etc., should be set so as to regulate this circulation, so as not to require such close gauging. So I will advance this argument. The mote knives do not separate the motes from the fibers, but serve to keep them separate. The same is true with the screens, casings, etc., and here is the secret boys. If these are not set properly with the slack setting, which I have advocated, you will find your web will look woolly and kinky like a negro's head, and your web will look cloudy like your licker-in was pulling your cotton in in bunches. However, it is not the licker-in that makes it look so, for if you were to employ 50 men to stand behind the card and feed the cotton to the licker-in in small balls it would not have this effect in the web.

Now Watchful Waiting says I misquoted him when I said he had advanced the idea that some spinners run their back rolls faster than their middle rolls. Well, my eyes are bad and hearing dull, so I got one of my nephews to read it over very loud and strong and this is the way it sounds to me through my ear trumpet. Listen. "Everybody that knows anything about spinning knows when the roving winds around the middle roll that the back roll is delivering it faster than the middle is collecting." Ha! ha!

So I can't admit a mistake yet, and have not admitted that I said .71 to .39, and if I was not afraid he might do it, I'd make the Bulletin prove it. I do play fair and don't expect to get whipped either. The reason it does not wind around the middle steel roll of the slubbers and speeders is because the draft is not so long, and there is so much more stock to carry it forward. If it had another process to pass, it would not go at all.

I note my younger brother Observers article, which I think very reasonable. His idea is about like my own if you remember I never have claimed to be the carder here and really I am not. I do not run the card room here. I was only giving J. D. the benefit of what happened here and what stopped the roving from winding around the middle roll, and I did not draw up an imaginary picture. What I said was actual facts if the carder gave me the true settings which I believe to be true, as it was no news to me. I have run carding and spinning, both, so I will say in conclusion, if you don't understand setting your cards to suit slack settings you better stick to what you do understand until you learn better. But if you set your feed plate and mote knives to a tight 7-1000 may the Good Lord help the spinner to be patient, long suffering, and pay his spinners well per side and give them some spare help, and may the superintendent not expect much production or strength of yarn spun is the prayer of your feeble old

Uncle Silas.

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THURSDAY, JULY 2

Directory Changes.

We have just issued the July 1st 1914, edition of Clark's Directory of Southern Cotton Mills and it is interesting to note the changes that have occurred since the Jan. 1st, 1914, edition.

During the past six months 93 mills have changed superintendents which means that, since Jan. 1st, one out of every nine mills in the South has made a change and in a few cases the same mill has changed several times during this period.

While we have not compiled detailed statistics of the increases in equipment during the six months, it is safe to say that such increase exceeded those made during the first half of 1913.

There have also been quite a number of new mill projects which are as follows:

Bettie Francis Mills, Alexander City, Ala.
Peerless Mills, Cedartown, Ga.
Shamrock Mills, Landrum, S. C.
National Yarn Mills, Belmont, N. C.
Appalachian Mills, Knoxville, Tenn.

Clinton Cotton Mills, Emporia, Va.
Cinchfield Mfg. Co., Marion, N. C.
Savage Mfg. Co., Savage, Md.

These projects represent 121,000 spindles, or more than \$2,000,000, but are considerable less than the increases to existing plants.

Faking the Mills.

Some twelve years ago when the editor of this journal was secretary and treasurer of a cotton mill, he received a call one day from a man who sought to sell him a receipt for making oil. The fakir claimed that he knew a secret process of manufacturing a lubricant that had all the properties of oil and that for the small sum of \$300 he would confide his secret to that particular mill. He did not sell the recipe to our editor, but it was reported that he did exchange his secret for a good sum to mills at Kings Mountain, N. C., and other points.

It therefore seemed like a voice from the past to receive this letter last week:

Ala., June 23, 1914.
Mr. David Clark, Editor,
Textile Bulletin,
Charlotte, N. C.

Dear Mr. Clark: Sometime ago a party called at our office, claiming to be a member of the firm of Henry Fink & Son, purporting to have offices in Baltimore, Washington and New York. He offered to the mill trade, a patent mixture, to mix with oil, thus reducing the lubricat-

ing expenses of a mill. His claim is, that with one-half of the mixture, and one-half of the regular lubricates, we could keep much cooler bearings, and the cost of lubricates, would be cut by one half. He also offered to supplement the ingredients, for the first barrel, all of which for the consideration of a certain sum, which increased according to the size of the mill, running anywhere from \$100.00 to \$500.00.

We have tried this mixture out, which he sent us, and find it a complete failure. We have ordered the same ingredients again, but still met with the same failure.

We have written to Baltimore, Washington and New York, but no such parties can be found. Since then, we have received quite a number of letters, from other mills, where the same party has sold this recipe, for a stipulated sum, and some of them did not even receive the ingredients for the first barrel of mixture.

We believe we ought to protect our manufacturers from this fraud, by calling attention, that this party, is going around selling this worthless recipe.

The party that called on us, was a short, stout gentleman, representing himself as one of the Finks, with a celluloid shield over one eye.

We have been unable so far to locate these parties, and they have sold some of these recipes in this neighborhood, and if you can be of any assistance to us by calling attention in your valuable paper, we certainly would appreciate it.

Yours very truly,

The stout party with the celluloid shield may not be able to see out of but one eye, but he has "put one over" those who are supposed to keep both eyes open and whom we know to be usually good business men.

It is strange how often the very best of business men will be taken in by fakers and we can only attribute it to the fact that such fakers are trained to shrewdness and it being a business with them know how to take advantage of every opportunity and every argument.

The Southern cotton mills have been singularly free from such fakers and with the exception of these oil recipes gentlemen and another set who sell an iron welding recipe we can not recall other attempts to swindle them.

Of course the operatives furnish a perpetual and lucrative field for the picture enlarging swindle, but their operations do not extend beyond the most ignorant class.

These picture frame artists solicit orders for enlarging photographs of members of the family or departed relatives, the charge for which is usually about two dollars, but when the enlarged photograph comes it is surrounded by a gaudy gilt frame

for which about five dollars extra is charged.

The man who delivers the picture, always a different one from the solicitor, insists that the frame was ordered and the ignorant operative believing that he will be put in jail if he refuses, is forced to pay for the frame.

A large force of men are continually playing this game, but it were put behind the bars.

The oil recipe fakers were active in the South about 1902, and we heard of them again about three years ago.

We are giving much prominence to this matter in hopes that they may be apprehended and brought to justice.

Any information that can be furnished us about the one eyed gentleman or any of his partners will be appreciated and we will treat as confidential the information that is sent us.

Cotton Crop For the Year 1913.


Washington, June 24.—Final figures on the 1913 cotton crop announced today by the Census Bureau, place it as the largest in the United States had grown with the exception of that of 1911. At the same time the estimate of the total value of the crop shows it was the most valuable ever produced, it being worth \$1,043,760,000.

The quantity of cotton ginned from the 1913 crop, counting round as half bales and excluding linters, was 13,982,811 running bales, or 14,156,468 bales of 500 pounds gross weight. Cotton seed produced was 6,305,000 tons, of which 4,579,508 tons were crushed.

The value of the cotton is estimated at \$887,160,000 and of the seed \$156,600,000.

On interesting feature of the 1913 production was the crop of the Imperial Valley in Southern California where 22,838 bales were grown. It has been reported the acreage planted this year in the Imperial Valley will show a large increase while the production is variously estimated at from 50,000 to 100,000 bales. Last year's production was more than double that of any previous year there, where commercial growing of cotton has been in progress only a few years.

Another feature was the production in Arizona where 2,299 bales were ginned, the largest part of which possessed the same characteristics as that grown in Egypt. The 1914 area shows a large increase, variously estimated at from 12,000 to 15,000 acres.



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PERSONAL NEWS

C. Enos Bean is now located at Millville, N. J.

D. A. Boiter of Clinton, S. C., has accepted a position with the Simpsonville (S. C.) Mill.

W. L. Pickleseimer is now overseer of weaving at the Fairfield Mills, Winnsboro, S. C.

B. L. Hames, of Henrietta, N. C., is now fixing looms at the Erlanger Mill, Lexington, N. C.

A. C. Coley has accepted the position of second hand in spinning at the Canron Mill No. 3, Concord, N. C.

C. D. Scott has resigned as master mechanic at the Selma (Ala.) Mfg. Co., to engage in other business.

Geo. W. Turnipseed is now overseer of carding at the Woodstock Mills, Anniston, Ala.

J. C. Tiddy has resigned as overseer of spinning at the Nokomis Mills, Lexington, N. C.

—, McDaniel has accepted the position of overseer of spinning at the Nokomis Mills, Lexington, N. C.

Joe Short of the Atlas Mill, Bessemer City, N. C., came near losing his home by fire last week.

C. E. Peiley has accepted the position of overseer of spinning at the Mobile (Ala.) Cotton Mills.

J. O. Spears has resigned a position which he has held for 16 years with the mills at McColl, S. C., and has moved to Benettsville, S. C.

Wm. P. Todd and Wm. Jarrell have returned to their homes at La Grange, Ga., after completing course at the Philadelphia Textile School.

C. D. Scott has resigned as master mechanic at the Selma (Ala.) Mfg. Co. to engage in the show business at Prattville, Ala.

W. F. O'Pry has resigned as overseer of spinning at the Chadwick Hoskins Mill No. 3 and accepted a position at Danville, Va.

W. P. Loftis, formerly of Whitmire, S. C., is now overseer of spinning at the Holt Williamson Mills, Fayetteville, N. C.

R. C. Mayes, who has been overhauling at Liberty, S. C., has become overseer of weaving at the Norris Mill, Catechee, S. C.

A. L. Noblett has resigned as loom fixer at Central, S. C., to become overseer of the cloth room at the Norris Mill, Catechee, S. C.

M. P. Champion of Cliffside, N. C., has accepted the position of second hand in carding at the Gaffney (S. C.) Mfg. Co.

M. C. Duncan now has charge of both carding and spinning at the New Century Cotton Mills, South Boston, Va.

J. M. Hedges, superintendent of the Cedar Falls (N. C.) Mills, has gone to Hendersonville, N. C., for a month's vacation.

G. B. Blair, electrician at the Lancaster (S. C.) Cotton Mills, was very badly burned by coming in contact with a live wire in the tunnel between the two mills.

P. L. Durham has resigned as overseer of the cloth room at the Norris Mill, Catechee, S. C., to accept a similar position at the Abbeville (S. C.) Mills.

Sherman Hill, of the Monarch Mill, Union, S. C., is now mechanic in the machine shop of the Chadwick-Hoskins Mill No. 3, Charlotte, N. C.

Fred B. Shepard of China Grove, N. C., has accepted overseer of spinning at the Cannon Mills, Concord, N. C.

P. K. Dry has been transferred from carder and spinning in Patterson Mill No. 1, China Grove, N. C., to a similar position in Mill No. 2.

J. B. Staten has resigned his position with the Exposition Mills, Atlanta, Ga., to become second hand in weaving at the Erlanger Mill, Lexington, N. C.

D. E. Mahaffey has resigned as overseer of carding at the Hermitage Mill, Camden, S. C., and accepted a similar position at the Camperdown Mill, Greenville, S. C.

—, Clark has resigned his position at the Granby Mill, Columbia, S. C., to become overseer of carding at the Hermitage Mill, Camden, S. C.

J. A. Guinn has resigned as card grinder at the Jackson Mill, Monroe, N. C., to become second hand in carding at the Manetta Mills, Lando, S. C.

OVERFLOW PERSONALS PAGE 16.

Winder Mills,

Winder, Ga.

T. A. Robinson.....Superintendent
S. C. Kinney.....Carder and Spinner
J. J. Robertson.....Weaver
W. P. Wall.....Cloth Room
C. M. Sherwood.....Master Mechanic

Capitola Mfg. Co.,

Marshall, N. C.

B. W. Bingham.....Superintendent
G. A. Lay.....Carder and Spinner
Fleet Nix.....Night Carder
P. A. Allison.....Master Mechanic

Kincaid Mills No. 2,

Griffin, Ga.

Allen Little.....Superintendent
J. H. Gossett.....Asst. Supt.
E. G. Simmons.....Carder
H. S. Galtin.....Spinner
W. J. Methutta.....Weaver
Ed. Bailey.....Spooler Room
W. G. Powell.....Master Mechanic

Gainesville Mill,

Gainesville, Ga.

W. E. Cheswell.....Superintendent
Mike Elliott.....Carder
J. W. Greene.....Spinner
W. B. Reynolds.....Weaver
J. L. Tucker.....Cloth Room
C. L. Bixby.....Master Mechanic

Erwin Mills No. 4,

West Durham, N. C.

E. G. McIver.....Superintendent
B. M. Bowen.....Overseer Carding
J. E. Eubanks.....Overseer Spinning
J. C. Kluttz.....Overseer Weaving
S. D. Hendley.....Overseer Sewing Rm
C. H. Johns.....Master Mechanic



Cramer System of Air Conditioning

WITH OR WITHOUT

Automatic Regulation of Humidity and Temperature

Moderate in Cost —

Cheap to Operate

Yields Big Returns

STUART W. CRAMER

CHARLOTTE,

NORTH CAROLINA

MILL NEWS ITEMS OF INTEREST

Lumberton, N. C.—The Lumberton Cotton Mills is having an addition built to the company store.

Macon, Ga.—The Willingham Mills will build an addition of 6,000 spindles for the manufacture of heavy duck. There will be 30 frames of 200 spindles each with 4-inch gauge.

Williamston, S. C.—The directors of the Williamston Mill held a meeting at Williamston last week and declared a 4 per cent dividend on common stock and 3 1-2 per cent on preferred.

Mayesworth, N. C.—The Mayes Mfg. Co., will erect a large addition. Contract has been let to T. C. Thompson & Bro., of Charlotte, for erection of the buildings.

Concord, N. C.—24 new spinning frames and 40 Draper looms are now being placed in the Brown Mfg. Co. and will start up in two or three weeks. To add this machinery, a basement was dug out and some of the old machinery transferred there, where it is now in operation.

Belmont, N. C.—The National Yarn Mills which were recently organized as noted, now have plans for the building. They will erect a 338x128 mill construction building, and install an equipment of 13,000 spindles to manufacture fine combed yarns. The belted electric drive will be used.

Louisville, Ky.—Members of the creditors' committee in charge of the Bradford Worsted Spinning Co., which has been operated by the American Woolen Co. for some 18 months, report that a sale of the property is in prospect. Several interests other than the American Woolen Co. they say are dickering for it.

South Boston, Va.—The New Century Cotton Mill will be sold at public auction on July 10th, by Henry Easley, trustee. The sale will include all of the real estate and the plant and other property of the company. The mill has 8,064 spindles and is now in operation. The sale is ordered by the court because of default of payment of interest due on the bonds of the company.

Paducah, Ky.—The Southern Textile Co., recently mentioned as increasing its capital stock, has made arrangements for considerably enlarging their business. They were formerly located in the plant of the Lack Singletree Co., but have leased a separate building and additional equipment is now being installed. W. C. Wright, superintendent of the company, is the inventor of a patented looper which has had a favorable reception from the knitting trade.

Greenville, S. C.—The Woodside Cotton Mills paid a semi-annual dividend of \$62,000 on July 1st.

Batesville, S. C.—The Prospect Cotton Mills have been incorporated with a capital of \$25,000 as successors to the Batesville Mills. McMillan B. King will be president and E. J. D. Camps, secretary.

J. E. Batson of Cedartown, Ga., is now carder and spinner at the mill of G. H. Tilton & Son, Savannah, Ga.

Richmond, Va.—The Queensbury Mills have been incorporated with a capital stock of \$25,000. The officers of the company are H. H. Chalkey, president, and Andrew D. Christian, secretary, both of Richmond. They have not yet announced the details of their plans, but it is understood that they will build a cotton yarn mill.

Lynchburg, Va.—The Lynchburg Cotton Mills have about completed the installation of the new machinery which they were reported as purchasing some time ago. The new equipment includes 10,000 spindles, from the Whitin Machine Works, a new Saco-Lowell slasher, and the American Moistening Co., humidifying system. Their output is sheetings, satens and prints.

Grantville, Ga.—The Grantville Hosiery Mills will increase their equipment by the addition of 500 spindles, thus doubling their capacity, as they now operate 5,000 spindles. They will erect a 220x100 foot addition of brick, with tar-concrete floor, and tar gravel roof, to take care of the new machinery. They will also remodel and enlarge the power house, install a new engine with condensing equipment, pumps, etc., and add a low pressure side to the engine.

Whitmore, S. C.—The Glenn Lowry Mills are receiving part of an order of 50 Ideal automatic looms, which they placed a short time ago with the Stafford Co. of Readville, Mass.

Charleston, S. C.—In the case of J. H. Lane & Co., against the Dillon Mills, asking that the merger of the Dillon, Hamer and Maple Mills be dissolved, Judge Smith in the United States Court here, rendered a decision in which every issue of the case was settled in favor of the mills, and the merger of the three mills will stand. The case has been in the courts for a long time, and has attracted considerable attention.

Spartanburg County Mill Dividends.

The cotton mills of Spartanburg County, S. C., paid out on July 1st semi-annual dividends amounting to \$314,000.

Arcadia Mills, capital \$375,000, 3 per cent; \$13,125.

Arkwright Mills, capital \$200,000, 3 per cent; \$6,000.

Clifton Mills, capital \$1,300,000, 3 per cent on common stock and 3 1-2 per cent on preferred stock; \$40,500.

Cowpens Manufacturing company, capital \$120,000, 4 per cent; \$4,800.

Inman Mills, capital \$350,000; 3 1-2 per cent; \$12,250.

Beaumont Manufacturing company, capital \$310,000, 3 1-2 per cent; \$10,850.

Saxon Mills, capital \$300,000, 4 per cent; \$12,000.

Spartan Mills, capital \$1,000,000, 4 per cent; \$40,000.

Tucapau Mills, capital \$460,000, 5 per cent; \$23,045.

Whitney Manufacturing Company, capital \$350,000, 3 per cent; \$10,500.

Woodruff Mills, capital \$525,000, 4 per cent; \$21,000.

Pacole Mills, capital \$2,712,700, 3

1-2 per cent on common and preferred stock; \$94,944.50.

No Cone Picnic This Year.

The picnic which, for several years, has been given by their employers to the employees of the Proximity, White Oak and Revolution Cotton Mills, of Greensboro, N. C., on July 4th will not be given this year. The people of these villages will be given an opportunity to attend the celebration at the Guilford Battleground or to go elsewhere if they desire.

When asked about the report that the picnic would not be given head men of the firm verified the report, stating that they had decided not to hold it in order to give the people an opportunity to enjoy themselves otherwise.

One of the big features of this day, however, will be observed as usual. This is the presentation of cash prizes in the three villages for conditions or improvements upon their premises. These prizes will total around \$500.

The company, pursuing its policy of providing for the happiness of the people in the villages, is making a park for the people of Proximity. This park will be at least 30 acres in size at the outset and is located west and north of the athletic park. Workmen are engaged in cleaning up the place, cutting out undergrowth, leveling, and laying out walks. Grass will be planted in the fall and shrubbery placed. The park will be made one of beauty in time, adding much for the pleasure of the people. It will be enlarged from time to time, the company having much land adjacent thereto.

A similar park has been made for the people of the White Oak Mill. It is on the lakeside and has been made a place of beauty and comfort.

Much other work of improvement and enlargement is being carried forward among these mill villages. Work is now in progress on the addition to the Revolution Cotton Mill. This plant will be made more than double its present size at an expenditure of more than \$1,000,000. The mill will have 2,000 looms instead of 800, giving a total of 75,000 spindles. It is hoped to have the building under roof by next fall. The machinery will be placed in the spring and in one year from next fall it is hoped to have the entire mill running.

The new prints works a part of the Proximity Manufacturing Company, has been running since last fall. This is a new field of endeavor in the south, but the management yesterday stated it is having good results. Such work has been done in eastern mills. As they gradually get more experience and gain in thoroughness they hope to enlarge the plant until it is of some magnitude.

The Proximity Manufacturing Company has been in its handsome new office building the past two



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D. D. FELTON BRUSH CO.,

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We will be pleased to send to the one responsible for weave room costs a sample of the shuttle we believe the most economical for you to use. Simply send us a worn shuttle and a full filling bobbin such as you are now using. The worn shuttle will explain your needs to us quite clearly. We'll write you fully explaining our shuttle. This service is free. You assume no obligations.

WRITE TODAY

SHAMBO SHUTTLE COMPANY

Woonsocket, R. I.

months. The building is of concrete and is handsomely finished within and without, costing 40,000. The new office made possible an enlargement of the weave room of the Proximity mill.

Romper and Crenelle Cloths.

In the regular offerings made by the Amoskeag Manufacturing Company are two new fabrics well worth the interest of buyers. These are the so-called romper and crenelle cloths. There is probably no one who has not had a greater or less amount of experience in regard to fabrics for children's wear, and there is a general feeling of disgust in regard to a large number of the fabrics used. There are a number of very desirable fabrics upon the market which can be used in rompers, and that give a large amount of service, but such cloths sell at quite high prices and the distribution in the ordinary children's garments has not been particularly great. An examination of children's wash suits in any dry goods store will illustrate very clearly what we say in regard to the unsatisfactory character of the fabrics used. Just about one or two washings, together with the wear which they receive, make them appear very unsightly and almost unfit for their purpose. It is impossible to understand why cutters-up will use such a low quality of material when a few cents additional will permit the use of a much more satisfactory fabric, but the facts in the case are that a large amount of criticism of children's garments has developed, mainly because of the low-class merchandise used.

Romper cloth is made with the wear and tear of children's clothes in view, although it is perfectly desirable for many other purposes. Probably most manufacturers are familiar with poplins and poplin constructions and realize that such fabrics intrinsically show about as great value as any cotton materials offered for sale. The new romper cloth is not exactly of the same construction as a good many poplins sold, but in many ways it is very similar, and inasmuch as poplins have been highly satisfactory, this romper cloth should be even more so, because it contains style, which a good many poplin fabrics could not, largely from their method of production. The colors are absolutely fast to the bleaching process, and for this reason will wear as long as the fabric. Probably no other cloth on the market at present offers such large value for children's garments.

The second fabric, namely Crenelle cloth, is different from any fabric previously brought to our attention. The patterns are in many ways similar to some lines of gingham, and they are made with



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is a problem—the problem that taxes the best in any manager—leads directors to seek the best managers. Its final test is efficiency—in the man and machinery.

THE TURBO HUMIDIFIER

was designed on the idea of plain, old-fashioned efficiency. Something that would keep young a long time; something that would do the work and give busy managers time to think of other problems. We want to talk to you on these lines—and these only.

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COTTON MILLS

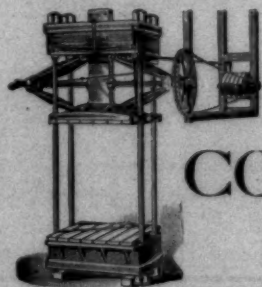
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stripes, checks and a wide variety of designs. The colorings are especially attractive, and should be desirable from a consumer's standpoint. The construction of this fabric is different than the romper cloth, but it undoubtedly will be largely used for the same purpose. The cloth contains a small allover momie weave, which, in addition to the method of coloring, gives a very attractive appearance, and results in effects not possible in any other way. This fabric is also made from stock-dyed cotton, and color can be absolutely guaranteed to wear as long as the fabric. The material is piece-bleached, this process giving a much clearer white than is possible in any fabric which has been made of dyed and bleached yarns. In addition, the method of piece-bleaching results in a much more even cloth than it is possible to obtain when a fabric is made at the loom and only a washing process is noted after the weaving operation.

The Amoskeag Company is looking for a large distribution among the cutters-up for these new fabrics, and undoubtedly will obtain it. The price is right, namely 8 1-2 per yard for the romper fabric and 9 cents per yard for the crenelle. It has been stated quite extensively in the market that sellers of fabrics anything at all like these offered will have to wait until the Amoskeag Company obtains all the orders which it can conveniently produce. Every concern today is looking for fabrics which will help swing a large organization, but there are very few which have the ability to work out a suitable fabric upon which a good distribution can be assured. Possibly the mills making colored yarn materials need styler or ideas more than any other section of the market.

There should be no difficulty in this company selling all it can produce of these cloths. Garments made from them should show especially satisfactory wear, and these cloths should be available to cutters-up in place of some of the more expensive fabrics which they have previously used with no cutting down of profits.—American Wool and Cotton Reporter.

Mill Worker Kills Self.

Huntsville, Ala.—Jonathan Powers, a cotton mill operative, 43 years old, recently from Columbus, Ga., committed suicide at Merrimack by firing a revolver bullet through his brain. He came to Merrimack about a week ago to visit his sister, Mrs. H. H. Roberts, and appeared to be despondent. His sister tried to hide all the guns and knives on the place, but Powers found a revolver and killed himself in his sister's room. He was a widower and had been in bad health for several months.

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Cotton Goods Report

New York.—Toward the end of the week the cotton goods market began to recover somewhat from the disturbing influence of the Claffin failure and business assumed a more normal tone. Business which had practically come to a standstill in many quarters of the market started to move again at the end of the week. Buyers who had come into the market became tired of listening to rumors and discussing the failure and began to look after their forward needs. Retailers are in need of business and are covering their needs. More encouraging reports come in from different sections of the country and those who feared a long string of failures were agreeably disappointed. Stocks throughout the market are well in hand and with a good retail demand, which is steadily increasing, goods are not accumulating. So far there has been no movement in merchandise to indicate any general lack of confidence in values, and this is thought to be due to the very clean conditions in many warehouses and on stock sheets. Mills are holding very steady and appear to be more determined to secure better prices or contract their output.

The mills making lawns have been able to secure considerable business on this class of goods. The demand has been very steady lately and prices have shown a steady advance. In some cases mills are sold up on lawns for six months ahead. Converters evidently think well of lawns and plain fine goods for another season. Voiles made from fine yarns have also been in good demand. There has been little change in the condition of wash goods. More favorable weather has stimulated business in the jobbing and retail ends. The season thus far has been a late one, but is showing gradual improvement.

Orders for spot and prompt delivery were reported in a good many quarters during the week. Staple cotton goods moved at firm levels, and agents of prominent mills expressed the opinion that the temporary halt of business would not materially effect the total volume of sales. Converters are somewhat slow getting started, but in most cases it is thought that this is due more to the firmness which the mills are holding than to any other cause.

Last week was a quiet one in the Fall River print cloth market. Little interest was shown by buyers and the business done called for spots and nearby deliveries. The total sales were estimated at about 100,000 pieces. Buyers seemed to be interested only in covering immediate needs. The mill men feel that the situation has returned to that which prevailed before the three weeks of active trading when the hand to mouth policy was followed. The mills here are still reluctant to meet Southern prices and that has taken some business away from them. They claim the prevailing prices allow very little

profit and for this reason they are holding steady, feeling that they will lose nothing by refusing to accept business on a concession basis. Sateens and twills sold in fair volume. Wide and medium widths still compose the most of the sales, with narrow goods continuing very dull. Few contracts are being made at this time, although some mills are sold up well into September, as a result of the recent period of activity. A fair demand developed during the week for fine goods. Business has been quiet with these mills for a considerable time and the interest shown was a surprise. No great volume of trading was done, but the change was considered encouraging. Reports from the brokerage offices here state that the mills in Fall River will not be affected by the H. B. Claffin failure.

Cotton goods prices in New York were as follows:

Print cloth 28-in. std 3 3-4	—
28-inch, 64x60s	3 1-2
4-yard, 80x80s	7 7 1-8
Gray goods, 39-inch,	
68x72s	5 3-4
38 1-2-inch, std.	5 1-4
Brown drills, std	8
Sheetings south'n. std 8	—
3-yard	7 1-4
4-yard, 58x60s	6
4-yard, 48x48s	5 1-2
4 1-2-yard, 44x44s	5 3-8
5-yard, 48x52s	5
Denims, 9-ounce	14 17
Stark, 9-ounce, duck	15 1-2
Hartford, 11-oz., 40-	
in. duck	16 1-2
Ticking, 8-ounce	13 1-2
Standard, fancy print	5 1-4
Standard, ginghams	6 1-4
Fine dress ginghams	9 8 3-4
Kid finished cambrics	4 1-2

Hester's Weekly Statement.

Comparisons are to actual dates not to close of corresponding weeks.	
In sight for week	38,000
In sight same seven days last year	26,000
In sight for the month	217,000
In sight same date last year	14,289,000
In sight for season	18,575,000
Port receipts for season	10,309,000
Port receipts same date last year	9,786,000
Overland to mills and Canada for season	1,134,000
Overland same date last year	1,064,000
Southern mill takings for season	2,748,000
Southern same date last year	2,598,000
Interior stocks in excess of Sept. 1	98,000
Interior last year	127,000
Statement of world's supply	visible
Total visible this week	4,161,820
Total visible last week	4,261,978
Of this the total of American this week	2,294,720
Of this the total American last week	2,400,973



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Cotton Yarns Mercerized and Natural.

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as the place to manufacture cotton goods is illustrated in the increase of 67% quoted by census department. We can offer attractive situations for those desiring to enter this field.

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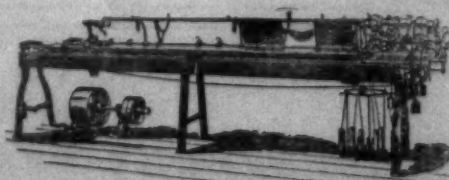
NORFOLK, VIRGINIA.

IMPROVED INMAN AUTOMATIC BANDING MACHINES

MANUFACTURED BY

COLE BROTHERS

PAWTUCKET, R. I.



The only automatic machine in the world for making loop bands for spinning frames. Superior quality of bands without any cost of making. All bands exactly alike and no stretch of bands after they are put on. Saves child labor.

Also Beaming Machine to beam on to slasher beams.

The Yarn Market

Philadelphia, Pa.—Business on the yarn market last week was generally quiet, though there were some sales in spots of from 25,000 to 100,000 pounds. The receipts of yarn from the South continue large, much larger than they should be if curtailment in that section is as general as reported. Prices were irregular.

The carded yarn hosiery manufacturers are reported to be doing a fairly good business. It is said that this branch of trade is showing decided improvement. Inquiries were received by dealers for lots of 10,000 to 50,000 pounds for summer and later deliveries. Sales of 24s, slightly tinged stock were made at 22 3-4 and 23 cents, 14s and 16s sold on the basis of 20 and 20 1-2 cents for 10s.

Inquiries for single combed yarns in lots from 25,000 to 100,000 pounds, from both hosiery and underwear manufacturers were received in the market during the week. The inquiries were principally for late deliveries and covered a wide range of numbers, from 12s to 40s. Southern frame spun 16s and 18s combed peeler for late deliveries were sold for 26 1-2 and 27 1-4 cents. A sale of 20s was made at 27 3-4, 24s old for 29 3-4 cents and 28s sold for 32 cents. There is not much demand for fine two-ply combed yarns on cones. The buying is practically all for small quantities for spot or prompt delivery.

The situation in the weaving lines remains practically unchanged. With only a few exceptions, weavers buy only small quantities for spot or prompt deliveries. It is said that practically all of the larger weaving mills have a good supply of yarns on hand.

Southern Single Skeins.

8s	18	—19 1-2
10s	19	—19 1-2
12s	19	—20
14s	20	—20 1-2
16s	20	1-2-21
20s	21	1-2
26s	23	—
30s	25	—25 1-2

Southern Two-Ply Skeins.

4s to 8s	18	1-2-19 1-2
10s	19	—19 1-2
12s	19	—20
14s	20	—20 1-2
16s	20	1-2-21
20s	22	—
24s	23	—23 1-2
26s	23	1-2-24
30s	25	—
40s	29	—29 1-2
50s	35	1-2-36
60s	45	—45 1-2

Carpet and Upholstery Yarn in Skeins.

9-4 slack	19	1-2
9-4 slack	19	1-2-20
9-4 slack	19	—19 1-2

Southern Single Warps:

8s	19	—19 1-2
10s	19	—20
12s	20	—20 1-2
14s	20	—21
16s	20	1-2-21 1-2
20s	21	1-2-22
24s	23	—23 1-2
26s	23	1-2-24
30s	25	—
40s	29	—

Southern Two-Ply Warps.

8s	18	1-2-19 1-2
10s	19	1-2-20
12s	20	—20 1-2
14s	21	—21 1-2
16s	21	1-2-22
20s	22	—22 1-2
24s	23	1-2
26s	24	—
30s	25	—25 1-2
40s	29	1-2-30
50s	36	—

Southern Frame Spun Yarn on Cone:

8s	19	—19 1-2
10s	20	—21
12s	20	1-2-21 1-2
14s	21	—22
16s	21	1-2-22 1-2
18s	22	—23
20s	22	1-2-23 1-2
22s	23	—23 3-4
24s	23	1-2-24 1-2
26s	24	1-2-25
30s	25	1-2-26 1-2

Single Combed Peeler Skeins:

50s	37	—
22s	23	1-2-24
24s	24	—24 1-2
26s	24	1-2-25
30s	26	—
22s	25	—25 1-2
24s	25	1-2-26
26s	26	—26 1-2
30s	27	—27 1-2

Two-Ply Carder Peeler in Skeins:

24s	24	—
26s	24	1-2-25
30s	25	1-2-26
36s	28	1-2-29
40s	31	—32
50s	37	—
60s	45	—46

Two-Ply Combed Peeler Skeins:

20s	28	1-2-29
24s	30	1-2-31
30s	32	—33
40s	36	—40
50s	43	—45
60s	47	—54
70s	58	—63
80s	67	—71

One Dream Realized.

"Strange," said the first tramp meditatively, "how few of our youthful dreams ever come true!" "Oh, I dunno," said his companion; "I remember I used to dream about wearin' long pants, and now I guess I wear 'em longer than any one else in the country."—Ex.

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Charlotte, N. C.

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Southern Mill Stocks, Bank Stocks
N. C. State Bonds, N. C. Railroad Stock and Other High Grade Securities

South Carolina and Georgia Mill

North Carolina Mill Stocks.

Stocks.

Bid. Asked

	Bid	Asked
Abbeville Cot. Mills, S. C.	100	
Aiken Mfg. Co., S. C.	35	
Am. Spin. Co., S. C.	150	153
Anderson Cot. M., S. C. pfd	90	
Aragon Mills, S. C.	65	
Arcadia Mills, S. C.	100	
Arkwright Mills, S. C.	100	
Augusta Factory, Ga.	35	
Avondale Mills, Ala.	115	120
Anderson Cot. M., com.	20	
Belton Cot. Mills, S. C.	100	105
Brandon Mills, S. C.	70	
Brogan Mills, S. C.	61	
Calhoun Mills, S. C.	51	
Cannon Mfg. Co., N. C.	120	110
Capital Cot. Mills, S. C.	85	
Chiquola Mills, S. C.	105	115
Clifton Mfg. Co. com.	97	
Clifton Mfg. Co., pfd.	100	
Clinton Cot. Mills, S. C.	125	
Courtenay Mfg. Co., S. C.	55	No
Columbus Mfg. Co., Ga.	82½	
Cox Mfg. Co., S. C.	78	85
Chiquola Mills, pfd.	78	85
D. E. Converse Co., S. C.	85	
Dallas Mfg. Co., Ala.	110	
Darlington Mfg. Co., S. C.	65	
Drayton Mills, S. C.	30	
Eagle & Phenix M. Ga.	72	
Easley Cot. Mills, S. C.	175	
Enoree Mfg. Co., S. C.	20	
Enoree Mfg. Co., pfd.	100	
Enterprise Mfg. Co., Ga.	65	70
Exposition Cot. Mills, Ga.	125	
Fairfield Cot. Mills, S. C.	70	
Gaffney Mfg. Co.	55	57.50
Gainesville C. M. Ga. com.	75	
Glenwood Mills, S. C.	80	
Glenn-Lowry M. Co., S. C.	101	
Glenn-L. M. Co., S. C., pfd.	72½	
Gluck	68	
Granby Cot. Mills, S. C.		
Granby C. M. S. C., pfd.		
Graniteville M. Co., S. C.	100	No
Greenwood Cot. M. S. C.	49	
Grendel Mills, S. C.	97	
Hamrick Mills, S. C.	102	
Hartsville C. M. S. C.	175	
Henrietta Mills, N. C.	116	
Inman Mills, S. C.	101	
Inman Mills, S. C., pfd.	100	
Jackson Mills, S. C.	90	101
King, John P. Mfg. Co., Ga.	80	
Lancaster C. M. S. C.	130	
Lancaster C. M. S. C., pfd	97	
Langley Mfg. Co., S. C.	70	75
Laurens Cot. Mills, S. C.	100	
Limestone C. M. S. C.	125	
Lockhart Mills, S. C.	125	
Marlboro Mill	60	
Mills Mfg. Co., S. C.	110	
Molloy Mfg. Co., S. C.	90	
Monarch Cot. Mills, S. C.	90	
Monarch Cot. Mills, S. C.	115	
Newberry Cot. Mills, S. C.	112	
Ninety-Six Mills, S. C.	150	
Norris Cot. Mills, S. C.	100	
Olympia Mills, S. C. 1 pfd		
Orangeburg M. Co., pfd	90	
Orr Cot. Mills, S. C.	81	

	Bid.	Asked
Arista		
Alphine, pfd		100
Avon		
Brown, com	115	
Brown, pfd		100
Cabarrus	120	
Cannon	150	
Chadwick-Hoskins, pfd.	100	
Chadwick-Hoskins, com.		
Chronicle	160	
Cliffside	190	195
Dakota	125	
Dixie	60	
Entwistle	100	115
Eldred		134½
Erwin, com.	155	
Erwin, pfd	120	105
Flint Mill	150	234
Gibson	109	110
Gray Mfg. Co.	130	
Henrietta	117	
Highland Park	190	
Highland Park, pfd.	102	
Imperial	130	
Kesler	140	
Loray Mfg. Co., pfd.	85	
Loray, com	10	
Lowell	200	
Majestic	150	
Paola	70	
Patterson	129	
Raleigh	85	
Vance	70	
Washington		
Wiscasset	140	
Ottaray Mills, S. C.		
Oconee, com	100	
Oconee, pfd	100&int.	
Pacolet Com.	103	
Pacolet Mfg. Co., pfd.	100&int.	
Parker, Com.	6	
Parker, pfd.	30	
Parker Cot. M. Co., guar	85	90
Pelzer Mfg. Co., S. C.	115	
Pickens Cot. Mills, S. C.	95	100
Piedmont Mfg. Co., S. C.	140	145
Poe, F. W. Mfg. Co., S. C.	92	
Richland C. M., pfd.		
Riverside Mills, S. C.	25	
Roanoke Mills, N. C.	140	160
Saxon Mills	116	
Sibley Mfg. Co., Ga.	45	52
Spartan Mills	116	
Toxaway Mills, S. C.		
Tucapau Mills, S. C.	280	
Union-Buffalo M. 1st pfd	35	
Union-Buffalo, 2nd.	3	5
Victor Mfg. Co., S. C.		
Ware Shoals M. Co., S. C.	70	
Warren Mfg. Co., S. C.	61	
Warren Mfg. Co., S. C., pfd	35	
Whitney Mfg. Co., S. C.	96	
Williamston Mills, S. C.	96	
Woodruff Cot. M. S. C.	95	100
Woodside Cot. M. S. C.		
Williamston Cot. M., pfd	96	

Personal Items

B. W. Pryor of Gaffney, S. C., has accepted the position of night overseer of weaving at the Shamrock Damask Mills, Landrum, S. C.

R. G. Carson of the Gray Mills, Gastonia, N. C., has accepted the position of second hand in carding at the Jewel Cotton Mills, Thomasville, N. C.

Glenn Lassiter, secretary and assistant treasurer of the Conneross Yarn Mill, Anderson, S. C., will hereafter act as superintendent also.

Boy Killed in Mill.

John Owens, 14-year-old son of G. Owens was instantly killed while working in the card room of the Chiquola Mill, Honea Path, S. C., Tuesday afternoon. From the best information obtainable it seems that while sweeping his arm was caught in the belting of the machinery and that his head was thrown forcibly against the floor, breaking his neck and causing instant death. His father is a blind man and this boy was the principal support of the family.

The Claflin Failure.

H. B. Claflin Co., of New York, the largest dry goods house in this country, were placed in the hands of a receiver last week with liabilities of \$300,000,000 and estimated assets of \$40,000,000.

An official explanation of the troubles of the H. B. Claflin Company was contained in the following statement issued from the house:

"The unprecedented shifting of trade centers in New York has caused great loss to many interests. In the case of the H. B. Claflin Company the uptown movement of business has seriously curtailed our wholesale profits and has compelled us to rely mainly on the profits from financing retail stores throughout the country. Their rapidly expanding business has occasioned large capital requirements which we have not been able to meet. A receivership has there-

fore become necessary pending a readjustment of the affairs of the company."

It is probable that an early reorganization will be effected.

Cotton Spinning Examinations.

(Continued from Page 7.)

a pair of bevels for each spindle. The spindles of both rows are made to revolve in the same direction by

the simple expedient of placing the skew driving bevel on the right hand side of its driven bevel in one row, and on the left hand side for the other row. The skew gearing is needed because the long driving shafts for the spindles are placed either in front or else behind the rows of spindles.

Fly-Lead and Bobbin-Lead Fly Frames.

(Continued from Page 8.)

ditions on fly frames unequal, although the grip and pressure aids in holding more twist in the strand.

The tension is mostly between the paddle and the surface of the bobbin, which means a slack tension between the hollow leg of the flyer and the bite of the rolls, a condition that should always exist on fly-frames.

The sun-gear rotates in the opposite direction to that of the driving shaft, which is a strong point against the bobbin-lead.

The friction is as great with the new so-called differential motion, as the differential sleeve is called on to check the periphery and drive the belt wheel or gear.

Any hesitation of the flyer in the flyer-lead through a worn flyer pin, etc., will cause slack, as the flyer leads the bobbin.

Any hesitancy of the flyer in the bobbin-lead through a worn pin, etc., will cause slack, as the flyer strain on the strand as the bobbin leads the flyer.—Candian Textile Journal.

The North Carolina College of Agriculture and Mechanic Arts.

This State Industrial College offers strong courses in Agriculture, Horticulture, Stock-raising, Dairying, Poultry, Veterinary Medicine; in Civil, Electrical, and Mechanical Engineering; in Chemistry and Dyeing; in Cotton Manufacturing, and in Agricultural teaching. Four year courses. Two and one year Courses in Agriculture and in Machine Shop Work. Faculty of 64 men; 738 students; 25 buildings; excellent equipment and laboratories for each department. On July 9th County Superintendents conduct entrance examinations at each county seat. For catalogue write,

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FIGURE 1

UNEXCELLED as a softening agent in the finishing of cotton fabrics. Used extensively both by finishers of colored goods and bleachers in finish of white fabrics. Any degree of "softness" may be obtained by the proper use of this article. A neutral preparation. Write for recipe for finishing.

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If you are needing men for any position or have second hand machinery, etc., to sell the want columns of the **Southern Textile Bulletin** affords the best medium for advertising the fact.

Advertisements placed with us reach all the mills and show results.

Employment Bureau.

The Employment Bureau is a feature of the Southern Textile Bulletin and we have better facilities for placing men in Southern mills than any other journal.

The cost of joining our employment bureau is only \$1.00 and there is no other cost unless a position is secured, in which case a reasonable fee is charged.

We do not guarantee to place every man who joins our employment bureau, but we do give them the best service of any employment bureau connected with the Southern textile industry.

Mill For Sale.

The entire property of The Huntsville Cotton Mills situated in the city of Huntsville, Ala., consisting of mill plant of 7568 ring spindles together with village and vacant property adjoining. Suitable for spinning tens to twenties yarn in skeins and warps. Now in operation. For particulars address Chas. Fletcher, Treas., Huntsville, Ala.

Drawing-in Hands Wanted.

Wanted—A few good draw-in hands for plain work. Will pay A-1 hand \$1.75 per day. Apply to Supt. Kershaw Cotton Mill, Kershaw, S. C.

Wonderful Bargain.

Three Fales & Jenks Twisters 224 spindles each 1 3-4 inch ring, 6-inch traverse, run only seven years, conditions good. Will be sold at 75 cents per spindle to make room for looms. Write quick to Banna Manufacturing Company, Goldville, S. C.

For Sale

Twenty-one 37-inch Howard & Bullough Revolving flat cards with 40-inch coilers. In good condition. Bargain price. if taken at once. Address No. 1050 care Southern Textile Bulletin.

Section Man Wanted.

Want section man for 20 Howard & Bullough speeders. Pay \$1.50 per day. Good chance for promotion for right man. Mill in middle No. C. Address 1051, care Textile Bulletin.

WANT position as superintendent. Have had long experience especially on hosiery yarns. Am considered a good manager of help. Last employer is my reference. Address No. 711.

WANT position as carder or carder and spinner. Have had good experience both as overseer and as machinery overhauler. Can come on short notice. Address No. 742.

WANT position as master mechanic at not less than \$3.00 per day. Now employed but prefer to change. Can furnish good references. Address No. 713.

WANT position as overseer of spinning. Have held present position colored, plain or fancy. Good ref- of work, fine or coarse, white or erences. Address No. 714.

WANT position as superintendent or as carder and spinner. Experience in both yarn and weaving mills and can give satisfactory. Good references. Address No. 715.

WANT position as superintendent in North Carolina, east Tennessee or northern South Carolina. Now employed but do not like location. Fine references. Address No. 716.

WANT position as overseer of dyeing. Now employed and only reason for changing is that I want larger job. Experienced on sulphur, direct and developed colors and bleaching. Am a good sizer. Address No. 717.

WANT position as overseer of carding. Age 36. Married. Sober. Have been in card room 17 years. Several years as overseer. Good references. Address No. 718.

WANT position as overseer of weaving. Have had long experience and can furnish best of references from present and former employers. Address No. 719.

WANT position as overseer of weaving. Have had experience on two to six harness work, both heavy and light on all makes of looms. Can furnish best of references as to character and ability. Address No. 720.

WANT position as overseer of carding in a mill of about 12,000 spindles. 30 years old. Married. Strictly sober. 14 years experience in mill. Can give good reference. Address No. 721.

Age 44. Good references from present employers. Have 4 hands for mill. Address No. 722.

WANT position as overseer of dyeing. 18 years on dyeing and bleaching warps and raw stock all colors. Also experienced on siz-

WANT position as overseer of carding at not less than \$3.00 per day. years experience in fine yarn mill. Good manager of help and can furnish good references. Address No. 723.

WANT position as superintendent. Age 45. Hay 25 years practical experience and now employed as superintendent, but want larger mill. Strictly sober. Can furnish good references. Address No. 724.

WANT position as superintendent. Now employed but wish to change to healthier location. Have had long experience. Would accept traveling position. Address No. 725.

WANT position as superintendent. Prefer a yarn mill. Age 25. Married. Well educated, but have also had long practical experience. Gift edge references. Address No. 726.

WANT position as superintendent or carder and spinner. Now employed and have made good on present job, but mill is to change hands. Good references. Address No. 727.

WANT position as overseer of weaving. Prefer Draper job, but am expert on box looms and dobbies. Have run large rooms and always given satisfaction. Address 728.

WANT position as overseer of spinning or second hand in large room. 5 years as overseer. Age 36. Married. References from former employers. Address No. 729.

WANT position as superintendent of either yarn or weave mill on either white or colored work. Now employed as superintendent, but prefer more modern mill. Would not be interested at less than \$1,200 per year. Address No. 730.

WANT position as superintendent of small mill or overseer of weaving in large mill. Age 48. Married. 30 years experience on wide variety of goods. Now employed and can furnish line of good references. Address No. 731.

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WANT position as sample room man or designer. Have had good experience on fancy and fine goods, both silk and cotton. Can furnish good references. Address No. 732.

WANT position as carder or spinner or both. Have had good experience in both rooms as overseer and can give satisfaction. Fine references. Address No. 733.

WANT position as overseer of carding. Now employed, but want larger room. Can furnish best of references. Address No. 734.

WANT position as roller coverer. 8 years experience. Am first-class roller coverer. Strictly sober. Steady worker. Can furnish good references. Address No. 735.

WANT position as overseer of weaving. Now employed but would like to change. Experience on both coarse and fine work. Good references. Address No. 736.

WANT position as superintendent. Besides having long experience as superintendent on both white and colored goods am expert designer. Now employed. Good references. Address No. 737.

WANT position as superintendent or overseer of large card room. 6 years as overseer of carding. 9 years superintendent. Experience on various classes of goods. Excellent references. Address No. 738.

WANT position as superintendent or overseer of spinning. Have had long experience in good mills and can furnish fine references. Address No. 739.

WANT position as master mechanic. Am a practical machinist and engineer of long experience. Can furnish the best of references. Address No. 740.

WANT position as overseer of spinning. Now employed but for good reasons wish to change. Have had long experience and can get results. Address No. 741.

WANT position as overseer of weaving. Now employed and giving satisfaction, but wish to change to more modern mill. Fine references. Address No. 742.

WANT position as superintendent of either spinning or weaving mills. Prefer white goods, but have experience on gingham and other colored goods. Fine reference. Address No. 743.

WANT position as superintendent or overseer of either spinning or weaving. Now employed but wish healthier location. Good references. Address No. 744.

WANT position as overseer of carding in medium to large size mill. Have many years experience on white and colored work, fine and coarse numbers. Married. On present job 7 years. Good references. Address No. 745.

WANT position as superintendent. Have had long experience and am now employed. Especially strong in carding department, but experienced in all. Address No. 746.

WANT position as overseer of weaving at not less than \$3.00 per day. Married. Temperate. Of good character. Experienced on plain and check work. References if desired. Address No. 747.

WANT position as superintendent or general manager. Have good experience on both white and colored goods and am good manager of help. Fine references. Address No. 748.

WANT position as carder in large mill, or carding and spinning in any size mill. Have long experience and have always made good. Now employed. Address No. 749.

WANT position as overseer of spinning. Have had long experience including 4 years as overhauler. Can give present employers as reference. Address No. 750.

WANT position as overseer of carding or spinning at not less than \$2.50 per day. Age 31. Sober. 15 years experience in carding and spinning. Can furnish good references. Address No. 751.

WANT position as overseer of spinning. Have had long experience, especially on market yarns and can furnish best of references as to character and ability. Address No. 752.

WANT position as overseer of carding. Now employed. Have run present job 3 years, and can furnish best of reference. Age 29. Have two hands for mill. Health of wife only reason for changing. Address No. 753.

WANT position as superintendent. Have had long experience on both coarse and fine yarns with special experience on hosiery yarns. Fine references from former employed. Address No. 754.

WANT position as overseer of weaving. Long experience on both white and colored goods and have had charge of large rooms. Can give last employer as reference. Address No. 755.

WANT position as superintendent. Long experience both as carder and superintendent on both yarn and weaving mills. Can give satisfactory references. Address No. 756.

WANT position as overseer of spinning at not less than \$3.00 per day. Have had experience in successful mills and can furnish fine references from former employers. Address No. 758.

WANT position as superintendent, overseer of spinning or traveling salesman. Have had long experience as overseer of large spinning rooms and can give former employers as reference. Address No. 759.

WANT position as carder or machinist. Now employed but prefer to change. Can give good references as to character and ability. Address No. 760.

WANT position as superintendent or overseer of weaving. Long experience and first-class references. Can get results. Address No. 761.

WANT position as overseer of weaving. Have had long experience both in the mill and erecting looms. Can furnish fine references. Address No. 762.

WANT position as master mechanic or engineer. Had -8 years experience in locomotive and marine work and cotton mill repair shops. Good references. Can change on short notice. Address No. 763.

WANT position as overseer of weaving. Age 33. Now employed but have best of reasons for wanting to change. Can furnish good references. Address No. 773.

WANT position as overseer of cloth room 14 years experience as overseer and can handle product of any mill in South. Nothing less than \$3.00 per day considered. Address No. 774.

WANT position as superintendent or manager. Am well educated and have had considerable practical experience. Now employed and can furnish fine references. Address No. 766.

WANT position as overseer of weaving. Now employed as second hand on fancy fine goods. Can give good references from past and present employers. Address No. 776.

WANT position as superintendent or carder and spinner. 16 years experience in those positions and am now employed. Can furnish best of references. Address No. 777.

A HUSTLER for production wants job as overseer of weaving. 15 years experience on shirtings, drills and duck, can give first-class reference as to my ability to run and manage a weave room. In order to take a needed rest I resigned my position several months ago, and have been in the canvassing business since. Address No. 778.

WANT position as overseer of spinning. Age 42. Married. Strictly sober. Have long experience on both coarse and fine white and colored work. Address No. 779.

WANT position as overseer of carding in medium to large size mill. Many years experience on colored and white work, both fine and coarse. On present job 7 years. Good references. Address No. 745.

WANT position as overseer of carding or spinning or both. Age 41. Married; 20 years experience. 15 years overseer. Good references. Address No. 780.

WANT position as superintendent. Have had long experience on both coarse and fine goods and can furnish best of references as to character and ability. Address No. 781.

WANT position as superintendent or overseer of weaving or salesman for sizing compound. Have had long experience in the mill and as salesman and can furnish good references. Address No. 782.

WANT position as superintendent of either yarn or cloth mill. Am experienced on hosiery yarns. Competent and reliable. Can invest some capital in good proposition. Address No. 783.

WANT position as superintendent or carder. Have had experience in as overseer of large card room, both North and South. Excellent references. Address No. 788.

WANT position as superintendent. Prefer mill on hosiery yarns, but would take hard yarn mill. Now employed and can furnish good references as to ability and character. Address No. 789.

WANT position as overseer of carding. Am experienced on both and fine numbers, white and colored. Prefer Georgia or South Carolina. Sober. Good manager of help. Satisfactory references. Address No. 790.

WANT position as superintendent of yarn mill. Long practical experience on all classes of yarns from 4s to 180s. Also experience on automobile tire and similar fabrics. Fine references. Address No. 793.

WANT position as overseer of carding. Now employed and giving satisfaction, but prefer healthier location. Good references. Address No. 794.

WANT position as overseer of spinning or carding and spinning. Married and strictly sober. 16 years experience. Am also a technical graduate of the I. C. S. Nothing less than \$4.00 per day will interest me. References. Address No. 795.

WANT position as overseer of weaving. Experienced on both white and colored work and on all makes of loom. Good references. Address No. 801.

WANT position as overseer of weaving. Am experienced overseer and also a good designer. Can furnish fine references. Address No. 802.

WANT position as overseer of spinning or carding and spinning. Now employed as overseer. Married. Age 27. Long experience. Good references. Address No. 803.

WANT position as superintendent of small mill or spinner in large mill. 13 years experience as overseer. Can furnish good references. Address No. 805.

WANT position as superintendent. Long experience, especially on fine combed yarns. Can furnish best of references from former employers. Address No. 806.

WANT position as superintendent or overseer of carding and assistant superintendent. Graduate Ga. Tech. Age 27. Married. Want larger job. Good references. Address No. 810.

WANT a position as overseer of carding in small room, or second hand in large one. Am now employed but want higher salary. Twenty-four years experience. Can amply furnish satisfactory references. Address No. 811.

Defects By Temples.

The average overseer of weaving seldom pays as much attention to temples as he ought to. This is often a prolific cause of bad cloth, which careful attention would prevent. Therefore a word or two on the subject should not be amiss. The overseer should see to it that the rings are kept free from waste and grit, otherwise they cannot rotate freely, thereby preventing the cloth from passing forward.

The spikes may be damaged by being turned up at the point and formed into a small hook. These catch onto the fibres and threads of the fabric and retard the forward movement of the piece until they tear themselves free, thus damaging the fabric. Many temple caps are made of brass; these quickly wear down when weaving some classes of goods, with the result that they fail to hold the piece out to the width in the slay, the warp-threads being chafed down at the selvage. Occasionally, the cap is indented or the barrel pin strained by reason of the shuttle being trapped in the shed, so that the piece is chafed while passing through the temple of kept from working forward freely. The temples may be set too near, so that the filling is cut between the temple and the reed wires, or the wires become strained, causing reed marks in the piece. Temple marks are sometimes due to the cap being set too keen or close to the barrel, which in some fabrics leaves the impression of the cap when the loom is left standing any length of time; such defects are usually more pronounced and developed during finishing.

One of the common causes of temples not being able to hold the piece effectively during weaving will be found to be due to a defective beaming of the warp, that is to say, in the case of tight or slack sections at the lists. All in all, it pays to look over the temples frequently and save trouble.—Fibre and Fabric.

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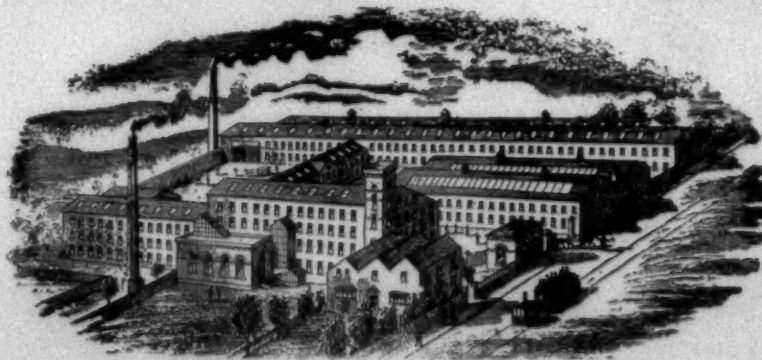
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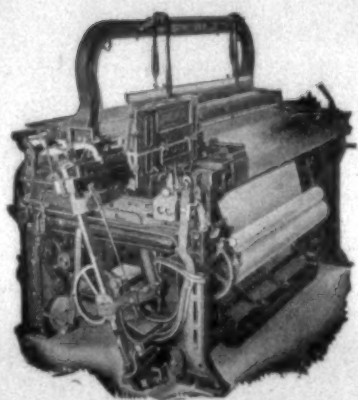
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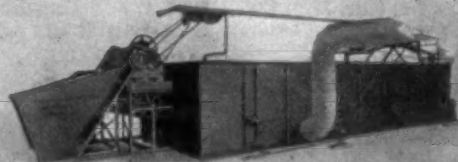
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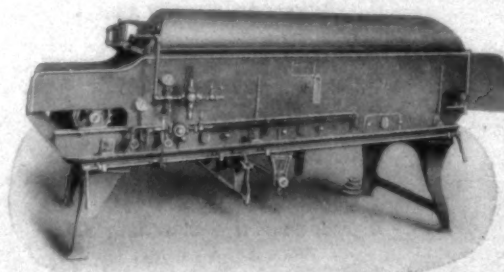
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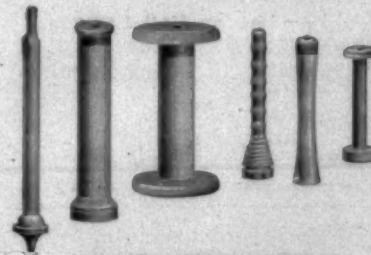
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